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SESSION II. Place of routine gynaecological examination

Gonorrhoea and the iceberg phenomenon

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The problem

Gonorrhoea control pilot studies have been launched in the United States for the purpose of extending our knowledge of the gonorrhoea problem. When the results of these studies have been analysed we hope to be in a position to design an effective gonorrhoea control programme. At this time, the extent of the gonorrhoea problem in the United States, and apparently in many other nations as well, seems to be growing faster than our knowledge of effective ways to control it.

The iceberg phenomenon

For many years many of us have believed that it was possible to group together on the basis of certain descriptive characteristics all carriers of infectious venereal disease. It was believed that this population of carriers could be separated from the non-infected population like a menacing iceberg floating in an otherwise serene and uncontaminated sea. The analogy was carried even further.

The venereal disease problem, like the iceberg, was said to be largely hidden from public and even more rigorous scientific scrutiny. We estimated that four out of five cases never came to the attention of Public Health officials. Furthermore, we contended that the kinds of people who acquired a venereal disease and were *not* reported were quite different from those who acquired a venereal disease and were reported. Here the iceberg analogy ends, for while most people would agree that the portion of the iceberg lying below the surface consists mainly of ice, just like the visible portion, few students of the venereal disease problem would agree that the kinds of people who were *not* reported were exactly like those who were.

One major purpose of our gonorrhoea control pilot studies is to determine to what degree the iceberg analogy represents the facts and to what degree it distorts the truth.

Read by: Dr. J. S. McKenzie-Pollock, Director V.D. Division, American Social Health Association.

A working hypothesis

In accordance with the requirements for scientific research, we take as our null hypothesis: There will be no differences in the social characteristics of gonorrhoea patients who come to medical attention through 'routine' epidemiological channels (mainly patients volunteering with symptoms to public social hygiene clinics) and those who come to medical attention through extended methods of casefinding (mainly through screening by culture of females already receiving pelvic examinations for any reason).

For many years the portrait of the 'typical' gonorrhoea patients reported to Public Health in the United States has remained unchanged. The 'typical' patient has been shown to be male, between the ages of 18 and 25 years, unmarried, and Negro. More often than not he lives in a metropolitan area, he has less than a high school education, and he is employed in an unskilled occupation. If we ask for his sex contacts, we expect him to report heterosexual contacts with several girl friends who live in the same residential area. He usually names several 'pick-ups' as well.

Now when it comes to picturing the 'typical' unreported case of gonorrhoea, the characteristics tend to be altered. Probably most observers would agree that, while there is a sizeable female reservoir, most unreported gonorrhoea patients are also males. But they are teenagers or college students and not blue-collar workers, they are white and not Negro, they live in the suburbs and not the city centre, and they tend to be middle and not lower class. And while most of the reported cases are among indigent patients who seek medical services in public clinics, most would argue that the unreported patients deliberately seek out private physicians who are known for their discretion. On the basis of common sense very few would agree with our null hypothesis which maintains that there are no differences between the reported and unreported groups of gonorrhoea patients.

Gleanings

A prediction of basic differences in the composition of these two groups seems safe, because it is very difficult to describe the characteristics of an unknown entity. The best one can do is to try to explore the unknown, probing for specimens and assuming that the sample gathered represents fairly accurately the population of unknowns that one wishes to describe. Many will quibble with these assumptions and methods, and since one can never really prove anything by this procedure, they will surely argue against one's conclusions. However, we feel that such research is necessary to develop an effective gonorrhoea-control programme. The only alternative policy we could suggest would be to stand by and allow the disease to spread without making any effort to restrict its course of destruction.

Our knowledge of the characteristics of venereal disease patients has arisen mainly from studies of syphilis patients, which have been facilitated by relatively reliable diagnostic tests. For example, an article published over 50 years ago, based on the results of Wassermann and luetin reactions, showed that the incidence of syphilitic infection among a group of white ward patients at the bottom of the social scale was approximately equal to that among Negroes (McNeil, 1916). Parran (1937), in his book which was responsible for encouraging congressional support for the war against syphilis waged in the United States in the late thirties and forties, also reported that 'whenever education and living conditions and the Negro race approximate that of the white race, the syphilis rate (of the Negro) approximates that of the white'.

A series of studies conducted in the state of Georgia in the late 'forties and early 'fifties generally found a high 'prevalence' rate to be closely associated with low level socio-economic conditions (Bowdoin, Henderson, Davis, Morse, and Remein, 1949; Warner, Hill, Bowdoin, Rion, and McCall, 1951; Hill and Mugge, 1954). Furthermore, the rates of positive tests for syphilis were three times higher among Negro females who were omitted from the original survey and were discovered only through follow-up activities, while the rates among Negro male nonrespondents were only slightly higher than those found among the original respondents. While the undetected Negro male syphilis patients tended to be identified as lower class, it was the higher class Negro females who were most often found through follow-up to be positive and in need of treatment (Warner and others, 1951).

In the North Carolina studies of the late 'forties, it was discovered that the white gonorrhoea patients from an urban area were more likely to volunteer for diagnosis than the Negro patients, the white females being twice as likely to volunteer as the Negro females (Wright and Sheps, 1949).

While the social class factor was not examined in the Carolina study, the implication drawn from the data is that Negro females are more likely to form part of the unexposed portion of the gonorrhoea iceberg than are members of the white female population. These findings offer a contradiction to the common sense hypothesis that the untreated female cases consist primarily of white, presumably middle class, patients from the suburbs.

Studies conducted in other countries show that gonorrhoea is more prevalent among recent migrants to industrialized urban areas, among those who have failed to study beyond the minimum educational requirements, among those drawn from the low income segment of the population and among those with the least vocational training (Goldberg and Sutherland, 1963; Ekstrøm, 1966). Most germane to our present line of inquiry is the study of reporting practices among medical practitioners in New Zealand conducted by Christmas, who found that the characteristics of venereal disease patients treated privately were very similar to those observed as hospital clinic outpatients with respect to age, sex, race, and occupation (Christmas, 1968).

A secondary analysis of the private physician attitude study data (Cleere, Dougherty, Fiumara, Jenike, Lentz, and Rose, 1967) gathered from physicians practising in selected areas in the United States generally concurs with the findings reported by Christmas. Of the physicians drawing their patients primarily from the higher income groups, 31 per cent. reported treating one or more cases of gonorrhoea in a specified 3-month period, compared with 53 per cent. of the physicians drawing their patients primarily from the lowest income group. When the willingness to report cases of gonorrhoea was compared for the two groups of physicians, no significant differences could be detected. While we cannot conclude that all the patients treated by physicians who draw most of their patients from the lowest income group earned the lowest annual income, these findings suggest that unreported gonorrhoea patients treated by private physicians may be primarily drawn from those in the lowest income group and not from those in the middle or high income range as is often assumed to be the case.

Preliminary findings of the pilot studies

The literature tends to support the argument that the invisible portion of the iceberg differs from that in full view, but it still largely consists of gonorrhoea patients with the same age, sex, race, occupational,

educational, and income characteristics as those who are reported and appear above the surface. Data extracted from the gonorrhoea-control pilot studies are far from complete, but we offer some preliminary findings at this time because they provide additional support for the proposition that gonorrhoea will be most often associated with the lowest social class in the community, even when the cases are not discovered through routine reporting channels.

Preliminary analysis of gonorrhoea results by the type of facility performing the test shows that five times as many positive cultures are found among young girls screened through poverty programme services (7·2 per cent. positive) than are positive when tested by private physicians (1·4 per cent. positive). The differences by type of diagnostic agency, when dichotomized by type of control, public or private, are highly significant, and suggest that physicians in private practice are considerably less likely to see gonorrhoea cases than their colleagues associated with publicly supported clinics and hospitals.

In one of the study areas, an obstetrician-gynaecologist group submitted over 150 specimens taken primarily from young, white married females best described as 'middle class' and only one of the specimens proved to be positive. The young lady with the positive test was from out-of-town. Of the 56 patients in the city who did not volunteer for treatment, only two could be categorised as middle class (Class III or higher on the Hollingshead two-factor index). Of the 41 patients diagnosed by physicians throughout the entire community, only three were classified as middle class or above (Classes I, II, and III on the Hollingshead scale). And in this same study area, over two hundred contacts of infectious gonorrhoea were examined and not a single one was found to have been previously treated and not reported. This indicated to the investigators that most cases in this community were being reported to the health department and that the gonorrhoea problem was disproportionately concentrated in the lower social classes. Gonorrhoea infections among persons classified in the higher social classes had been sought, but very few could be found.

Implications

It has long been proclaimed that syphilis and gonorrhoea know no social barriers. Venereal disease can be found among all the races of mankind, in all age groups, and within all social classes. This is certainly true, but it appears to us that venereal disease is far more likely to occur among those working in unskilled occupations, with less than average education, and earning less than average wages.

We are not satisfied that the verdict on this issue is final, but the evidence available to us at this time suggests that we should revise the iceberg hypothesis to read: While the proportion of middle-class patients tends to be larger in the portion of the iceberg not visible in routinely-reported morbidity statistics, the characteristics of unreported gonorrhoea patients closely resemble those of the routinely reported gonorrhoea patients. During the coming year we shall be gathering more complete information through screening programmes on the distribution of gonorrhoea among females in an effort to challenge our hypothesis.

Unless we find sufficient evidence to reject this hypothesis, we shall develop gonorrhoea control measures around these findings. Our educational appeals will be designed to improve the health conditions and awareness of residents of the black ghettos. We will be more concerned with physicians serving the needs of the lower social classes in the city centres. We shall cooperate in every way to encourage better living conditions and social opportunities for the poor.

While we recognize the need to concentrate on these high-risk segments of the population, we cannot relax our guard in the groups in which the gonorrhoea rate is relatively lower. Whenever a female is examined for a gynaecological problem, regardless of race, residence, or class origin, we want her to be examined for gonorrhoea. Through a programme designed in this fashion, we hope to solve the control of gonorrhoea as a major Public Health problem in the United States.

Summary

Gonorrhoea control pilot studies have been initiated in the United States to provide information which will be used to develop a gonorrhoea control programme. The 'iceberg phenomenon' is examined in this paper in terms of available research findings and the preliminary reports provided by selected study areas. The evidence suggests that the hidden portion of the gonorrhoea iceberg probably resembles the observable portion in terms of the descriptive characteristics of the infected populace. A stepped-up effort to work with high-risk groups of females classified as of the lowest social class and residing in urban ghetto areas is recommended. However, the author believes that physicians should always consider the possibility of gonorrhoea infection among their patients, regardless of their social standing in the community, and advocates testing for gonorrhoea as a part of every routine gynaecological examination.

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La gonococcie et le "Phénomène de l'iceberg"

SOMMAIRE

Des études-pilotes ont été entreprises aux Etats-Unis sur la lutte contre la gonococcie pour procurer des informations pouvant servir à établir un programme de lutte contre cette infection. Dans le présent article, le "phénomène de l'iceberg" est examiné en fonction des résultats fournis par ces études et des rapports préliminaires reçus des régions choisies. On s'aperçoit, ainsi, que la portion cachée de l'iceberg gonococcique ressemble probablement à sa portion visible en ce qui concerne les caractéristiques de la population infectée. Il est recommandé de faire porter un effort nouveau vis-à-vis des groupes de femmes hautement contagieuses, c'est à dire celles des classes sociales les plus basses et qui résident dans les ghettos urbains. Cependant, l'auteur croit que les médecins doivent toujours envisager la possibilité d'une infection gonococcique chez leurs malades, quel que soit le niveau social de la communauté et il préconise que la recherche de la gonococcie fasse partie de tout examen gynécologique de routine.